

Application No. 09/982052
Page 2

Amendment
Attorney Docket No. S63.24-8920-US01

Amendments To The Claims:

1. (Previously presented) A stent delivery system comprising:

a catheter comprising an expandable distal portion, having an outer diameter, constructed and arranged for expanding the outer diameter of said expandable distal portion from a contracted state to an expanded state;

a stent positioned around said distal portion of said catheter, said stent having a contracted condition and being expandable to an expanded condition, the stent being sized in said contracted condition to surround said expandable distal portion in its contracted state, said stent having a first end and a second end, wherein at least a portion of the stent may be positioned over a portion of said expandable portion of said catheter; and

a first sleeve in the region of said distal portion of said catheter positioned around said catheter, the first sleeve having a first end attached to said catheter, and being positionally fixed relative to the catheter, and a second end being about the expandable distal portion, wherein the expandable distal portion is movable within the second end relative to the second end, said second end of the first sleeve abutting the first end of the stent when the expandable distal portion is in its contracted state, such that the first sleeve and the stent do not overlap.

2. (Previously presented) The stent delivery system of claim 1, the expandable distal portion comprising a balloon, wherein the stent is expanded by expansion of said balloon and the stent is mounted on the balloon.

3. (Previously presented) The stent delivery system of claim 1, further comprising a second sleeve in the region of said distal portion of said catheter positioned around said catheter, the second sleeve having a first end attached to said catheter and a second end, said second end of the second sleeve abutting the second end of the stent when the expandable distal portion is in its contracted state, such that the second sleeve and the stent do not overlap.

4. (Withdrawn) The stent delivery system of claim 1, wherein the second end of the first sleeve has a thickness and the first end of the stent has a thickness similar to that of the second end of the first sleeve, such that profile transition from the second end of the first sleeve and the first end of the stent is relatively smooth.

5. (Withdrawn) The stent delivery system of claim 3, wherein the second end of the first

Application No. 09/982052
Page 3

Amendment
Attorney Docket No. S63.2A-8920-US01

sleeve has a thickness and the first end of the stent has a thickness similar to that of the second end of the first sleeve, such that profile transition from the second end of the first sleeve and the first end of the stent is relatively smooth.

6. (Original) The stent delivery system of claim 1, said first sleeve being formed in the shape of a thin-walled tube.

7. (Previously presented) The stent delivery system of claim 1, the catheter further comprising an outer shaft and an inner shaft, the outer shaft being coaxially about the inner shaft, wherein the first end of the first sleeve is about the outer shaft.

8. (Original) The stent delivery system of claim 3, said sleeves being formed from polyurethane.

9. (Original) The stent delivery system of claim 3, said sleeves being formed from any elastomer able to be expanded with a balloon angioplasty catheter, and formable into a thin-walled tube.

10. (Original) The stent delivery system of claim 1, wherein the second end of the first sleeve has an annular region of increased thickness.

11. (Original) The stent delivery system of claim 3, wherein the second ends of the sleeves have an annular region of increased thickness.

12. (Withdrawn) The stent delivery system of claim 10, wherein the annular region of increase thickness is in the form of a bulbous bulge.

13. (Withdrawn) The stent delivery system of claim 11, wherein the annular regions of increase thickness are in the form of a bulbous bulge.

14. (Withdrawn) The stent delivery system of claim 1, said first sleeve being formed in the shape of a coil, such that the second end of the first sleeve is urged against the first end of the stent.

15. (Withdrawn) The stent delivery system of claim 3, said sleeves being formed in the shape of a coil, such that the second ends of the sleeves are urged against the ends of the stent.

16. (Original) The stent delivery system of claim 1, said second end of said first sleeve having greater thickness relative to the first end of the first sleeve.

17. (Original) The stent delivery system of claim 3, said second ends of said sleeves having greater thickness relative to the first ends of the sleeves.

*Application No. 09/982052
Page 4*

*Amendment
Attorney Docket No. S63.2A-8920-US01*

Claims 18-19 (Canceled).

20. (Previously presented) The stent delivery system of claim 3, wherein the second ends of the sleeves are urged against the ends of the stent, whereby when said expandable distal portion is expanded from said contracted state to said expanded state said stent is expanded, the center portion of the stent being expanded first while the expansion of the ends of the stent are delayed until the release force between the second ends of the sleeves and the ends of the stent are overcome by the expansion of the expandable distal portion.

21. (Previously presented) The stent delivery system of claim 1, the expandable distal portion being a medical balloon, the medical balloon comprising a proximal cone, a distal cone and a body portion between the proximal and distal cones, wherein the first sleeve is about the distal cone or the proximal cone.

22. (Previously presented) The stent delivery system of claim 21, the medical balloon further comprising a proximal waist positioned proximal to the proximal cone and a distal waist positioned distal to the distal cone, wherein the first end of the first sleeve is about and connected to the proximal waist or the distal waist.

23. (Previously presented) The stent delivery system of claim 3, the expandable distal portion being a medical balloon, the medical balloon comprising a proximal cone, a distal cone and a body portion between the proximal and distal cones, wherein the first sleeve is about the proximal cone and the second sleeve is about the distal cone.

24. (Previously presented) The stent delivery system of claim 23, the medical balloon further comprising a proximal waist positioned proximal to the proximal cone and a distal waist positioned distal to the distal cone, wherein the first end of the first sleeve is about and connected to the proximal waist and the first end of the second sleeve is about and connected to the distal waist.